R E P O R T R E S U M E S

ED 015 029 PS 000 285

MEMO--COMMENTS ON THE WOLFF AND STEIN STUDY.

BY- BRONFENBRENNER, URIE

PUB DATE JAN 67

EDRS PRICE MF-$0.25 HC-$0.24 4P.

DESCRIPTORS- KINDERGARTEN CHILDREN, *FOLLOWUP STUDIES, MINORITY GROUP CHILDREN, *RESEARCH METHODOLOGY, *EARLY CHILDHOOD EDUCATION, LEARNING READINESS, ACHIEVEMENT RATING, COMPARATIVE TESTING, DATA ANALYSIS, *EVALUATION, HEAD START, NEW YORK CITY,

THE VALIDITY OF THE WOLFF AND STEIN CONCLUSIONS (SIX MONTHS LATER. STUDY I. PS 000 281) IS CHALLENGED ON THE BASIS OF ONE MAJOR AND FOUR MINOR METHODOLOGICAL DEFICIENCIES. THE STUDY'S MAJOR CONCLUSION WAS THAT FORMER HEAD START CHILDREN HAVE GREATER LEARNING READINESS THAN THEIR CLASSMATES HAVE SIX MONTHS LATER BUT THAT NO EDUCATIONAL GAINS HAD BEEN MADE. THE MAJOR CRITICISM IS THAT, ALTHOUGH ECONOMIC AND SOCIAL ADVANTAGES GREATLY FAVORED NON-HEAD START CHILDREN, WOLFF AND STEIN CONSIDERED THE ADVANTAGE TO BE "SLIGHT." THE ALTERNATIVE TO WOLFF'S CONCLUSION IS THAT CHILDREN FROM DEPRIVED HOMES ARE ABLE TO HOLD THEIR OWN WITH CLASSMATES FROM BETTER ADVANTAGED FAMILIES AS A RESULT OF HEAD START ENRICHMENT. (LG)

ED015029

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

MEMO:

COMMENTS ON THE WOLFF AND STEIN STUDY

URIE BRONFENBRENNER

JANUARY 1967

PS 000285

Urie Bronfenbrenner
January, 1967

MEMO: Comments on the Wolff and Stein Study

This study compares the performance of 179 children who had had Head Start with 388 of their classmates who had not. The children were enrolled in 40 kindergarten classes, taught by 15 different teachers in four different schools; two of them Puerto Rican, one Negro, and one mixed.

The major conclusion of the study, as drawn by the authors, is two-fold (p. 83):

The findings of this study show that overall, the children who had Head Start still have greater readiness for learning than their classmates, six months later.

They also show that in the kindergarten studied, no educational gains had been made despite their greater "thirst for knowledge."

The conclusion concerning the lack of educational gain is based on the absence of significant differences between Head Start children and their controls.

The validity of the conclusions of this study clearly depends on the comparability between the Head Start and control groups at the point of entry into kindergarten. On this score, the authors conclude (p. 8)

"These findings indicate clearly that the home environments of both the Head Start children and the non-Head Start children in the kindergarten studies are very similar with a slight economic and social advantage in favor of the non-Head Start children in each of the ethnic groups.

For that reason the changes that the study found in the two groups of children after six to eight months of kindergarten can be attributed primarily to school centered rather than to any home centered factors."

In my judgment, the assumption of similarity made by the authors can be seriously called to question, for, on examination, the economic and social advantages favoring the non-Head Start children can hardly be dismissed as "slight". They include the following (data taken from Tables 1 and 2 of the study): 1) the percentage of families in the Head Start group with incomes of $5000/year or better is 27; the corresponding percentage for the control group is 41. Consistent with this fact, the number of Head Start families on welfare or ADC is twice that for the control group. 2) Among the Head Start families the percentage with more than three children in the home is 44. (the corresponding figure for the controls is 29.) Given the well-established negative correlation

PS 000285

between family size and intellectual level, particularly in lower class groups, the higher number of large families in the Head Start group can hardly be disregarded. 3) With respect to amount of schooling, the proportion of fathers of Head Start pupils with an education of eighth grade or less was 38; the corresponding figure for the controls was 24. Although the comparable difference was negligible for mothers, 37% of the Head Start mothers had high school education or better; the corresponding figure for the control group was 50%.

The conclusion that the Head Start made no educational gains is based on the absence of any significant difference in score obtained by experimental and controlled groups after approximately 6 months attendance in kindergarten. No measure of educational status was obtained at the beginning of kindergarten, or for that matter, at the time that the experimental group entered Head Start. The investigators apparently assuming that if the experimental group got any "head start" at all from their pre-school experience, the control group was able to catch up to them by the sixth month of kindergarten. Such an inference of course rests on the assumption that both experimental and control groups were at comparable levels of intellectual development before the Head Start program began. No evidence is provided in support of this assumption. On the contrary, as we have seen, the data cited by the authors point strongly to the probability that the control group had a higher level of intellectual development than the experimental group before the Head Start experience was introduced. This conclusion follows from the well established correlations existing between measures of intellectual performance and such variables as family income and family size.

In the light of the foregoing considerations, the fact that the Head Start and non-Head Start groups show comparable scores after six months of kindergarten represents testimony favoring the effectiveness of the Head Start experience rather than the reverse. In other words, what the data seems to show is that children coming from relatively deprived families who have a Head Start program are able to hold their own with children from better advantaged families well into the first year of school. When one adds to this fact the additional finding of the study, which seems to be well established, that the Head Start children have a greater readiness for learning than their classmates, the impact of the program takes on even greater significance.

In addition to the major flow outlined above, the study suffers from a number of additional methodelogical deficiencies:

1) Ordinarily one makes analyses in terms of total score since this is the most reliable and best index of the child's status. When such a score is computed from the data provided in Table 8 (the tests of significance employed by the authors, all of them yielding a negative result, were made separately for each of the part scores of the Pre-School Inventory instrument), the results indicate an average that is 10 points higher for the Head Start group than for the controls.

Although the data cited do not permit a test of statistical significance, there is a good possibility that the Head Start group actually scored reliably higher than the controls.

2) In their test of significance the authors employ error scores based on individual differences among subjects without regard to school or classroom. Since, in point of fact, the children were grouped in 30 different classrooms in 4 different schools, there is the possibility that there were significant differences from classroom to classroom. This factor is not taken into account in the statistical analysis: that is, an appropriate design would have shown individuals as nested in classrooms and classrooms as nested in schools, with appropriate partitioning of variance into classroom and school components.

3) An even more important omission is the failure to examine separately scores for boys and girls. Previous studies have shown appreciable differences in scores for the two sexes at this age level, particularly in the case of Negro children where males have shown lower scores, but greater gains attributable to pre-school programs.

4) The authors state that "to prevent any bias for or against Head Start from influencing the rank given a child," the teachers were not told that this study was being done in connection with Head Start evaluation. Although such precaution is desirable, the critical question still remains as to whether the teachers knew whether a given child had or had not a Head Start program. Given such knowledge, the teacher's evaluation of the child cannot be assumed to be free of possible bias for or against the Head Start experience.

Both the major and minor deficiencies outlined above reflect a general weakness in methodology characterizing the study as a whole. Many of the statistical procedures employed are crude if not wholly inappropriate. It is doubtful whether in its present form the study would have been accepte ' for publication in any established scientific journal.

P.S. Incidentally, the study with the best matched control group that I have run across to date is the one conducted by one of my own graduate students, Robert R. Rice, now at the University of Missouri where he worked with a Head Start group in Kansas City. At the end of approximately eight months of kindergarten his Head Start group of 104 Negro children had a mean score of approximately 18 points higher on the Caldwell Pre-School Inventory than a control group of Negro children from the same housing project. Since Rice used the same instrument employed in the Wolff study, his results give us some indication of the kinds of results that are obtained when the control group is closely matched to the experimental group at the outset of the study.